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CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

Vol. XIX MARCH, 1947 No. 3

One of the thrilling sights of the tropical American jungle is the silhouette of air-minded Bromeliads crowded in their various habitat stratas, forming aerial gardens everywhere in the trees. (From "Brazil: Orchid of the Tropics" used by permission of Jacques Cattell Press.)

CACTUS AND SUCCULENT JOURNAL

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CONVENTION NOTES

The second biennial convention at Cincinnati will convene on June 26th, 27th, and 28th, 1947. The program is as follows:

THURSDAY, JUNE 26th

9:00 to 12:00 a.m.—Registration of delegates and guests, Balcony, Sinton Hotel.
12:30 p.m.—Luncheon, Art Museum, Eden Park.
2:00 p.m.—Organization Meeting, Eden Park Shelter House.
8:00 p.m.—Convention Hall, Sinton Hotel, Kodachrome slides and movies.

FRIDAY, JUNE 27th

10:00 a.m.—Convention Hall, Sinton Hotel, Meeting and talks.
12:30 p.m.—Luncheon meetings of groups with sections to interest everyone.
Evening, no meeting. Trips to Coney Island or theatres. Details at convention.

SATURDAY, JUNE 28th

9:00 a.m.—Eden Park. Cactus Show and Photographic Show. Conducted tours of the Conservatory.
2:00 p.m.—Closing session of the convention, Convention Hall, Sinton Hotel.
7:30 p.m.—Banquet, Hotel Sinton.

As can be seen the principal activities will center at the Hotel Sinton, which is the official headquarters of the convention. To be assured of accommodations at the Sinton, reservations must be made early, now is the best time. Rates at the Sinton are: Single $3.00 and up; Double $5.00 and up; Twin Beds $7.00 and up. Reservations can be made by writing the Convention Chairman stating exactly the class of accommodation desired and the number and name of the members of your party. A deposit of an amount equal to the first day's charges is usual. Send reservations to W. Taylor Marshall, Chairman, Box 647, Tempe, Arizona.

In addition to the delegates appointed by the affiliated groups, all members of the Society and their family and friends are invited.

DESERT BOTANICAL GARDEN NOTES

On Saturday, February 22, a delegation of the California members of the Society, 22 strong, assembled at the Garden after a 410 mile trip from the coast. They were welcomed by W. Taylor Marshall, the Director, and by Mrs. O. F. Janssen and Mrs. Diana Moss, the hostesses acting for Mrs. Gertrude Webster, President of the Arizona Cactus and Native Flora Society, who was unable to be present.

After inspecting the plantings the guests were entertained by member R. C. Proctor, whose fine color photography is featured in Arizona Highways Magazine. Mr. Proctor showed many of his best kodachromes of Arizona Cacti in flower. Refreshments were served by Mrs. Mary MacCallum and Mrs. Claire Meyer Proctor.

On Sunday morning a visit was made to the extensive cactus garden of Mrs. Webster in Arcadia. This garden was described and pictured by George Lindsay in the JOURNAL. At 11 a.m. the party returned to the Garden where a meeting of the Cactus and Succulent Society was held and final plans for the second biennial convention approved. A buffet luncheon followed.

The Los Angeles party included President and Mrs. Carl Brassfield, Junior Past President Maybelle Place and Charles Place, Vice President George Lindsay, Treasurer John Poindexter, Secretary Ethel Rush and members Howard E. Gates, Robert Poindexter, Dr. and Mrs. R. T. Craig, E. O. Orpet, S. E. Beahm, Geo. L. Martin, Mr. and Mrs. Larry Butler, Mr. and Mrs. Wm. Goodwin, Mr. and Mrs. L. M. Wahrer, and Mr. and Mrs. Cactus Pete.

Many valuable new plants were brought to the garden by the visitors and further accessions include a fine Mammillaria collection from Mrs. Starkweather of Tucson, a collection of Sonoran Plants made by associate director Lindsay on a trip he took to Guaymas immediately following the meeting, and a collection of rare Sedums from Homer Rush.

Oakland Cactus and Other Succulent League

The February meeting was held at the home of W. Andrews. Interesting slides of cacti and other succulents were shown. Mr. Hastings showed slides of his flowering Phyllocacti, of which he has a large selection. Mrs. Reed and G. W. van der Bundt contributed slides of various cacti and succulents. 24 members were in attendance. Plans were made for the annual spring garden show. This group will have a display of 600 square feet: 300 feet for 300 plants of not less than 100 varieties of cacti, and 300 feet in 50 varieties of other succulents. The garden show, which has done much to keep the Society before the public, will run from April 24 to May 4th.

Oklahoma Cactus and Succulent Society

The December meeting of the Society was held at the home of J. B. Lankford, outgoing president. A year ago at the 1945 meeting Charles Polaski presented each member with *Echinocactus Grusonii* about 4 inches in diameter and gave the signal for a 12-month contest, the winner to be given a prize for the best growth made by the plant. This award was a beautiful *Echinocereus rigidissimus* and was won by Mr. Wiese whose plant measured 5½ inches.

FIG. 18
Young plants of *Espostoa melanostele* just starting a pseudocephalium. Mrs. Akers is more interested in a rare cactus to be described as a new genus.

A Cactus Collector Goes to Peru

By JOHN F. AKERS

After observing many thousands of Espostoas over a period of two years, it became self evident that the generic description should be revised. The following amended general description covers the most recent discoveries about this very interesting genus.

Columnar or arborescent plants from two meters to several meters in height, which either branch from or above the base. They are characterized by a heavy coating of cottony or silky hairs that usually hides the body of the plants. This dense covering of matted hairs generally is snow white in color, although it may be tinged with red as is the case with *E. Dautwitzii*. With age, especially in certain very arid zones, the covering turns black on the lower part of the plant, and this gave rise to the name "melanostele" or black column. On reaching maturity, the plants put out a heavy, lateral, pseudocephalium of hairs which is entirely different from those covering the body of the plants. The hairs of the pseudocephalium are long, glassy and are not matted. In some cases, this pseudocephalium grows from the tip of the plant down one side, but in others it is completely lateral and doesn't reach the growing tip. In a few cases a double pseudocephalium is formed, one on each side of the plant.

Espostoa lanata (H.B.K.) B. & R. has a grayish white cephalium which does not contrast greatly with the body of the plant, but the cephalium of *E. melanostele* Borg is a dark amber brown which looks entirely foreign and out of place on these snowy plants. The flowers are all *nocturnal* and not diurnal. The buds appear in the morning, suddenly pushing their way out of the pseudocephalium. The flowers open around 6 p.m. and are from 2 to 3 inches across and quite attractive. They open out flat and are not bell-shaped (campanulate) as has been stated in former descriptions. The tube is rather heavy and contains many small scales that are quite hairy (in contrast to *Cephalocereus* and *Pilocereus* which have smooth, hairless, flower tubes). The outer perianth segments are greenish, tinged with pink, but the inner ones are creamy to pure white. The stamens are numerous and are cream colored, as are also the style and stigma. The flowers close early in the morning, assuming the closed campanulate shape that has been seen and described by other collectors. The flowers are firmly bedded in the plant body and it is impossible to pick one without tearing off the base of the ovary. The withered flower is persistent, but later falls from the fruit when the latter is nearly ripe, leaving a circular scar.

The fruits develop inside the plant body and the only visible evidence of their existence is the dried flowers protruding from the pseudocephalium. When ripe, the fruit is pushe dout of the cephalium and I have seen fruits squeezed out to drop at my feet. The fruits are usually

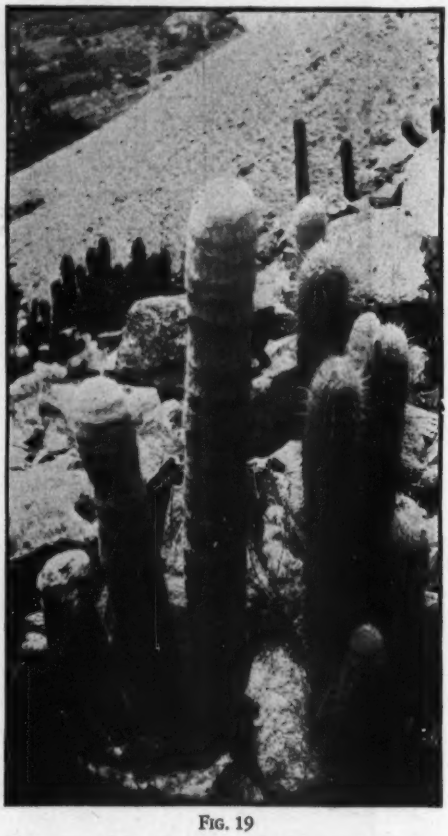

FIG. 19

Espostoa melanostele associated with a rare cactus at Santa Eulalia. Note ringed growth of wool-like hairs darkening towards base of plant.

top-shaped (those of *E. Dautwitzii* are nearly ovoid). The epidermis is smooth and translucent like that of an onion, and the scales are very small and bare. A faint line or stripe extends from the scales towards the base of the fruits. They are usually greenish to pinkish in color (except *E. Dautwitzii* which has bright carmine-red fruit). The pulp is white to greenish, acid and edible, although far from delicious. The seeds are small and only sparsely scattered throughout the pulp. They are usually shiny but may be dull.

The plants grow well and relatively fast in cultivation here in Lima and maintain their snowy color. Cuttings are very difficult to root, taking at least one to two years to commence growing.

Espostoa melanostele var. *inermis* Bckbg. is

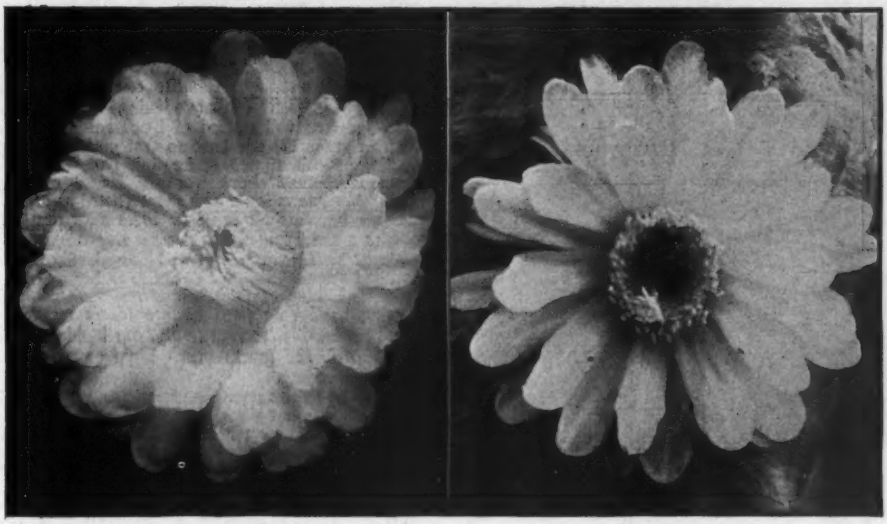

FIG. 20
LEFT: *Espostoa melanostele*. RIGHT: *Espostoa lanata*.

undoubtedly the most attractive species in the tribe Cereeae. All of these plants grow at an elevation of from 3,000 to 10,000 feet in frostless zones and do not appreciate cold weather. They inhabit rocky hillsides where drainage is good and will stand considerable moisture.

ESPOSTOA MELANOSTELE (Vaupel) Borg

This snowy-white, attractive cactus is quite a common sight in the ravines of the western slopes of the Peruvian Andes. The plants grow at an elevation of from 3,000 to 10,000 feet, but those existing at the dry, lower edge of this zone are not nearly so showy as those growing at the higher altitudes. The plants are usually limited to 3 or 4 strict branches or columns that may reach a height of 8 feet or more. When these cacti reach maturity, they produce a distinctly lateral pseudocephalium from which are produced the flowers and fruits. The matted hairs covering the body of the plants closely resemble absorbent cotton. They usually exhibit a ringed appearance, which is indicative of the increase in plant height each growing season. The cottony hairs are massed more thickly at the top of the cactus, and occasionally, curved-billed humming birds make their nests on top of an *Espostoa*. The pseudocephalium may be as much as three inches wide by three feet long. The variety *inermis* Bckbg. has a denser growth of hair and short to invisible spines.

ESPOSTOA DAUTWITZII Haage jr.

This *Espostoa* superficially resembles *E. Melanostele*, although the stems are more noticeably clavate or club-shaped. The plants likewise branch in the same fashion thereby increasing the similarity between the two species. There are, however, some distinct characteristics. The new wool and new spines are tinged with a pinkish-red color, which is more noticeable if the plants are grown in the shade. The spines, although reddish-yellow when new, quickly fade to a bone-gray color. These spines are much more subulate than those of *E. melanostele*. The pseudocephalium resembles that of the latter plant, but the color is much lighter. The fruits are ovoid in shape and are carmine-red in color. The seeds are small, black, and shiny. This plant grows in an intermediate zone on the coastal side of the Andes, and hasn't been under observation as long as the other two species.

ESPOSTOA LANATA (H.B.K.) B. & R.

The plants form a short trunk and then branch in candelabra shape to reach a height of 15 feet and a breadth of 10 feet. The pseudocephalium is narrow and short, usually being not over 12 inches in length. As this lateral pseudocephalium reaches the growing tip of the plant, it has been described as a pseudocephalium from the central axis. This species only inhabits the

FIG. 21

Espostoa lanata showing wide open flower and hairy scales on the tube.

warm interior valleys on the eastern slopes of the Andes. These valleys have an elevation of about 3,000 to 5,000 feet and receive considerable rainfall. The hairs that cover the plant body are more silky and glassy than those covering *E. melanostele*. As the former is a much larger plant, they form a dominant part of the landscape around Huánuco. The fruits are nearly identical with those of *E. melanostele*, and are light green. They are top-shaped with greenish, acidic, edible pulp which is sparsely filled with dull black seeds. The spines are never bright yellow or conspicuous and soon turn gray with age. This species of *Espostoa* is most outstanding in size and appearance.

March 1. 56° at noon. Spring in the air. *Mammillaria fragilis* bloomed. Soft yellow, cup-shaped. Buds circled just above last year's batch of headlings. *Crassula multicava* is a mass of fairy-pink blooms. Mostly four petals; usually 5 for Crassulas. Tried to hybridize *Bryophyllum Fedtschenkoi* x *Daigremontianum*, using both plants as possible seed parents. Too early yet to note the results. *B. tubiflora* x *B. Daigremontianum* was success in 1936.

March 3. 62° at noon. Opened up doors and ventilators of greenhouse. Delightful spring smell of wet earth from yesterday's thorough watering. *Urbinia agavoides* flowered. Bells of orangy yellow and red. Red tips on leaves adds to interest. Used *Aloe variegata* pollen on *Aloe longistyla* flowers. *Gymnocalycium platense* budded. Blooms on and off all summer.

March 4. 67° at noon. *Euphorbia* "candelia" has pink blooms in clusters as well as singles up and down reed-like stems. Favorite of mine. *Gymnocalycium* "Hennisii" (Johnson listing) fruit found by small red ants and robbed of black seeds. Another batch of seeds I'll not have to feel guilty about not planting. White-tipped, cerise-pink fruit of *Lophophora Williamsii* above wool of center of plant. *Cereus platygonus* has a new shoot (listed as an *Eriocereus?*) by Marshall & Bock. Plant most nearly resembles a short spined *Nyctocereus serpentinus*.

March 5. *Haworthia retusa* bloomed. Short thick stem and compact flower head adds to beauty of this star-shaped Haworthia. *Adromischus maculatus* is growing in double pot. Mature leaves mottled, 2 inches across. *Nyctocereus serpentinus* budded on east exposed side for fourth year. Light on south and west is too strong.

March 7. Papers report cold wave on way. Bebuilt fire which was out since March 2nd. Watered Echinopsis and plants near stove. Dry out faster than others in greenhouse. *Cotyledon* hybrid resembling *teretifolia* bloomed. Light yellow with reddish tips. Attractive flowers resembling Trout Lilies. Leggy if kept too dry; spindly, if too wet.

March 8. Graptopetalum-Echeveria hybrid with pink tips and edges over gray-lavender, bloomed leaves in flower. Reddish old-rose bell with Graptopetalum arrangement on stem. *Echeveria Derenbergii* bloomed. Yellowish with light orange flush along petals. Plant grows leggy.

March 9. *Mesembryanthemum Blandum* budded. Attractive semi-vining type in strawberry jar. Kept on dry side. Blooms regularly. Used to only keep a cutting to start each summer; now keep plants. Bloom profusely in March and April and again in July and August. No waste and plenty of "Spring beauty."

March 12. *Hatiora salicornioides* through blooming. Miss fragrance in closed, moist greenhouse air. Had to repot in 1944. Missed blooming. *Selenicereus spinulosus* budded. Aerial root now ⅛ inch thick. Helps support plant and feed same from soil in which plant is potted. Stems stubby, not over 3 feet long. Hasn't had new shoot for last three years. Adult or Starved? That's my problem.

March 15. *Opuntia microdasys minima alba*, is a constant worry. Spine bugs like it. Protective coloration? Only *O. microdasys* I've left; used to endure the spines to say I had them. Now I don't worry when cactophiles say I have one you don't have. Keep them, says I! My fingers rebelled!

March 16. *Crassula orbicularis* bloomed. Blooms are exquisite under my "3 diameters" magnifying glass. Perfect beds of pink. *Wilcoxia viperina* must have been exhausted by its 3 blooms last year. Developed fruits, vermilion orange with spines. *Ceropegia Woodii, C. stapeliaeformis* and *C. Barkleyi* growing. Real curiosities; window plants for wet gardeners.

March 18. *Euphorbia obesa* growing. Its staminate flowers are dried up. Need a mate for him, but so far have seen none. Mrs. Charles Amato of Lorain, Ohio, got one from Hirt Brothers, Strongsville, also *Euphorbia bupleurifolia*. Two musts for me soon.

March 20. 34° at 5:30 a.m. Warmed up; opened ventilators before I left for school at 8 a.m. Grafted *Schlumbergera Gaertneri* flowered. Hung in cool spot to retard blooming. Original piece sent to me in 1936 in envelope with letter.

Continued on page 40

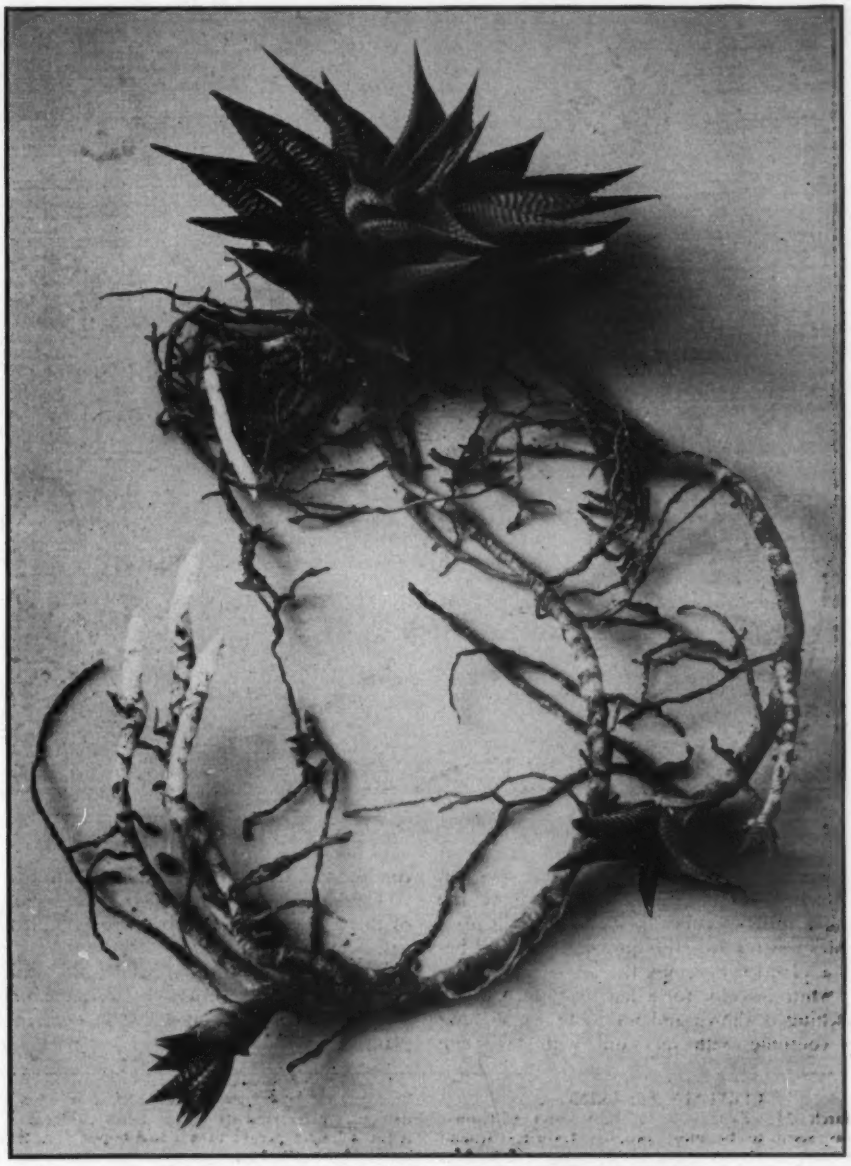

FIG. 22. *Haworthia limifolia* var. *stolonifera* Resende reduced.

Notes on Haworthias

By J. R. BROWN

Haworthia limifolia var. **stolonifera** Resende shows a very interesting method of reproduction by means of the stout, subterranean shoots.

A photograph of this Haworthia is shown with 50% of the stolons removed (those in the rear of the plant as photographed), so that the remainder could be more clearly seen. The

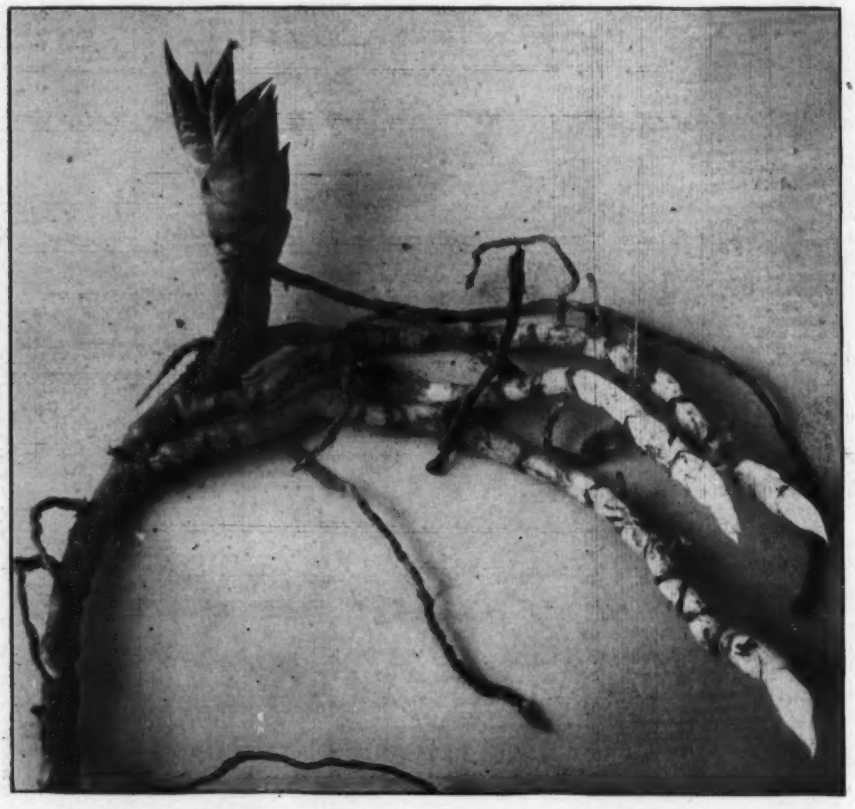

FIG. 23. *Haworthia limifolia* var. *stolonifera* Resende. Tips of stolons. nat. size.

vigorous nature of the stolons or rhizomes can be noted, and the sturdy appearance of the young plantlets. They show a gradual increase in thickness towards the growing tips, and before a plantlet develops the growing tips are very white in color for a length of several cm. Branching is shown and no doubt rebranching may continue with age, and with favorable conditions a large colony of plants formed.

The longest stolon measured 36 cm., and part of this is shown with a plantlet and 3 branches nat. size.

While this stoloniferous habit is not confined to this particular variety of *Haw. limifolia* Marl., it is probably most pronounced in this plant.

CEREUSLY SPEAKING

March 24. *Euphorbia splendens* and Christmas Cactus seem to be most people's favorites around here. Easy to grow or early introductions. I wonder which.

March 25. *Gasteria verrucosa* bloomed in greenhouse and *Forsythia spectabile* bloomed in yard. Spring is here! Have almost decided to let my "cactus seedling asperations" die a natural death. Can do much better with the other succulents. Can buy my cacti from experienced growers.

March 26. *Euphorbia Ledienii* bloomed. Large for size of stems. Structure only appreciated when viewed as a magnified subject. *E. cereiformis* has been in flower a long time. Full of nectar undiscovered by flies or ants. *Echinocactus Lecontei,* a skeleton with its spines preserving its former beauty. Dead! I had it for a longer period than I had hoped for. A loss, yes sir, I'm sorry, too.

March 27. *Graptopetalum amethystinum* bloomed. Seed pod on *Aloe longistyla* now 1 inch long and 1½ inches around. Round and medium green. Ring of blooms open. A good dependable bloomer. Rhipsalis plants are all growing new tips.

March 31. 51° at noon. Excess temperature to date 732°. March excess 468°. 31 days of sunshine out of 90. *Lophophora Williamsii* in flower again. Bloomed in February. Over half of March days were sunshiny. Thus ends another day by day, rapid survey of my ever increasing observations.

Vriesia hieroglyphica "king" of the Bromeliads.
From "Brazil: Orchid of the Tropics" used by permission of Jacques Cattell Press.

Do You Know the Bromeliads?

By MULFORD B. FOSTER

Part IV

VRIESIA

Among the leafy tank-epiphytes Vriesias are such an outstanding group that they might be ranked as the aristocrats, but are, perhaps among the many less popularly known bromeliads. Like Tillandsias and Guzmanias their leaves are without marginal spines, but are gracefully spiraled in a perfect rosette. Broadly speaking, the species that have plain green leaves, generally have a showy inflorescence while those that have the most decoratively colored leaves may have inflorescences of no brilliance, (*V. splendens* and *V. guttata* are remarkable exceptions). I have in mind *V. hieroglyphica* and *V. Fosteriana,* both of which have exceptionally marked leaves while their flowers are not very spectacular; also *V. carinata* hybrid (*Marie*), whose plain green foliage produces a most brilliant bloom.

Practically all of the smaller Vriesias come from the dense moist jungle where they have much shade and heavy dew. When man takes them out of their native home, he must give them humidity and shade as they are more sensitive than many of the other bromeliads.

Vriesia hieroglyphica, long known as the "king" of all bromeliads, has been grown in Europe for many years; it is absolutely tops in decorative beauty. Fantastic purple-black hieroglyphs are tattooed on both sides of its glossy green leaves and this zebra effect mottling does just what nature intended, giving the plants such good protective coloration that they are almost lost among the flecked lights and shadows of jungle trees. It is a thrill of a life-time to see it majestically and unobtrusively perched high on a shadowed branch. Out of the jungle, it is

FIG. 25
Vriesia heliconoides is a sparkling gem just as striking in color as many of the Heliconias.

best suited to greenhouse culture where the humidity and light can be controlled.

Vriesia Fosteriana is just as beautiful as its close relative, *V. hieroglyphica; V. Fosteriana,* however, instead of growing in densely shaded jungle trees was found growing in bright sunlight in sandy hillsides withstanding considerable drought. The reverse conditions produce reverse coloration, so, *V. Fosteriana* has brilliant maroon glyphs on its green leaves which resemble some pattern the Indians might weave in a tapestry.

Vriesia carinata hybrid (*Marie*), has almost no rivals when it comes to conspicuous and long lasting inflorescence; its brilliant red and yellow distichous flower spike has rightly been named

FIG. 26
Zebra pattern in a Bromeliad! Jungle protective coloration creating for your modern living-room a harmonious plant accent. On either side of the stunning two-tone plant novelty of *Vriesia splendens,* are two sentinel columns of *Billbergia Meyerii.*

the "Painted Feather." This hybrid was made in Belgium many years ago and has had wide circulation in Europe. In cultivation it prefers shade and a moist atmosphere.

Vriesia guttata has dull blue-green leaves completely peppered with small maroon spots arranged in a somewhat banded effect. It has such remarkable protective coloration that a

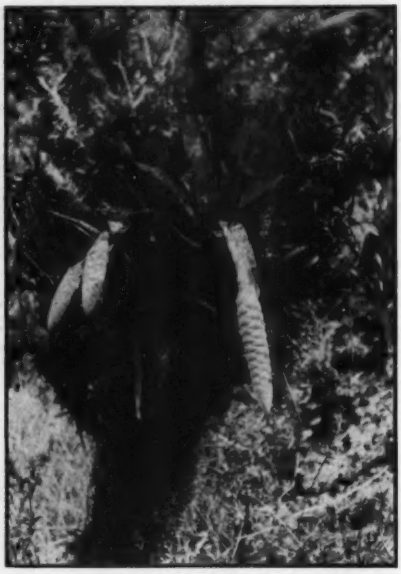

FIG. 27
Vriesia guttata has dull, blue-green leaves completely peppered with small maroon spots. The inflated over-lapping bracts are covered with "talcum powder."

photograph in its native setting was almost impossible; however, when I found a cluster with three spikes of bloom, it wasn't inconspicuous in the least because the delicately tinted inflorescences were quite a show against the tree trunk covered with a mat of miniature orchids. The inflated, over-lapping pink bracts are covered with a "talcum powder;" one is reminded of shells or something from the sea, rather than from the jungle. Although the pale yellow flowers are not spectacular, the whole blooming period of *V. guttata* is a joy to witness.

Vriesia heliconoides is native from Panama on down through the South American tropics to Bolivia. This really sparkling gem is just as striking in color as many of the Heliconias which belong to the banana family. The long chaste white flowers poised above the brilliant cerise and white canoe shaped bracts will demand anyone's attention and admiration. Why the plant has not been available to plant lovers I cannot understand, for it has been known many years. Some day it will be available I am sure.

There are nearly one hundred known species of Vriesias native to Brazil and it has been my good fortune to have been the discoverer of some twenty percent of them.

To be continued

FIG. 28. *Lithops lerichenea.* One of interesting Stone Faces. Photo by Boyd L. Sloane.

Rock Gardening

By MRS. CACTUS PETE

Seriously, have you ever tried to grow a crop of stones? The African Mimicry plants, the so-called "Stone Faces" and "Flowering Rocks," are, without doubt, the least understood and the hardest to grow under cultivation, of all the succulent family of plants. However, they are hard to grow only because we do NOT understand them.

The average collector of unusual plants is at a loss as to how these plants should be grown or cared for. Everyone who sees these desert jewels finds them most interesting to look at, but, after a few unsuccessful attempts to grow them, the average person gives up in disgust. This need not be so, for a little understanding as to their native haunts and habits would help us all to treat these odd plants just a bit better than we do.

Many years ago, we were told this interesting story. We cannot remember who told us, nor can we vouch for its authenticity, but it seems quite probable and does illustrate the habits of these strange plants:

It seems that for many years, stories had come out of South Africa, about a tribe of natives who actually ate rocks and stones. Scientists scoffed at this idea but the stories persisted, all giving different versions of rocks which were good to eat. At last someone, I know not whom, started out on a trek into the South African wilds in search of these edible stones. The party traveled far into this wild country but found nothing. At last, they decided the whole thing was a wild goose chase. In disgust, the leader threw himself down for a bit of rest. Whether he rested we do not know but soon he was conscious of a dampness penetrating his clothes. This seemed odd in such a dry, barren wasteland. He looked and there beneath him, was one of these "edible stones," crushed and juicy. Now they knew just what to look for. Further search disclosed many of the "rocks" all over the area. They re-traced their steps and found they had been walking over them, without seeing anything but the usual pebbles and stones of that district. This certainly illustrates perfectly the wonderful ability of the "stone crops" of blending with their surroundings.

It does seem that at lease some of the Mimicry plants have a high salt content, and in South

FIG. 29. *Conophytum cinereum* Lavis. Photo by H. Herre.

Africa, where salt is scarce, these edible plants are highly prized by the natives. I once talked to an English woman, who had been born in S. Africa and she told me that they often used the more fleshy "Stone Crops" in salads and that she had found them quite tasty, having eaten them since childhood.

The "Stone Crops" are miniature water-storage tanks. Their home is the natural desert-land of the African veldt, the Transvaal, the little and the great Namaqualand, those wide expanses of wasteland where rain seldom falls, sometimes once in three years, so I have been told. In their native home, when the rains do come, these peculiar plants will drink up all they can hold. They will swell up and puff up until sometimes they actually burst wide open. They live on this stored water until the next rains come.

Most varieties have a semi-retractable root system. When the soil or air about them is wet or damp, the plant will push up out of the ground, elongating its roots and thrusting its small body out to receive the greatest possbile amount of warmth and dampness. In the case of *Lithops, Fenestraria* and *Titanopsis* it is quite noticeable that the plant body also becomes elongated. (When grown under cultivation, these elongated leaves are apt to be a sign of over-watering). In the dry season, the root system contracts and draws the crown of the plant somewhat underground. Then only the little stone faces show above the ground. The Fenestrarias will completely withdraw, leaving only the small, windowed tips exposed to the surface and as the dry season progresses, these tips take on a pinkish hue which really makes them resemble the back of a baby's little pink toes sticking out of the ground; hence the common name of "Baby Toes."

In the rainy season the plants all become quite green, but at the height of the dry season they show their true jeweled tones of most unbelievable colors—white, purples, pinks, browns and even yellow tones, some mottled and marbled, some smooth and waxy.

The Lithops and Conophytums, which look like smooth rocks, pebbles and pieces of marble, grow by actually shedding their skins. Under each paper-like skin is hidden the new growth. This old skin even helps to protect the plants from extreme heat and dryness.

Did you ever watch the progress of Lithops? In the center of each original seedling, is a small round hole, scarcely noticeable at first. With each successive shedding, this tiny aperture becomes a bit larger—extending crosswise the tiny plant, with the new opening always

FIG. 30. *Herreanthus Meyeri.* Photo from S. W. A. Nurseries.

appearing criss-cross the old one. When at last this opening seems to cut entirely across the plant, it is usually time for it to bloom. Often when it has bloomed, the next shedding of its parchment-like skin will reveal two plant bodies instead of the original one. Then the process will start all over again on each of the new plant heads.

To a certain extent, all of the Mimicry plants are cannibals, being "self-devouring." The most noticeable instance of this is perhaps in the genus *Pleiospilos* — the well-known "split Rocks," "Giant's Big Toe" and the "Liver Plants." In this plant-group, the original plant consists of two fat, puffy leaves, angular in shape, of a grayed- or brownish-green color, appearing to be broken pieces of granite. These leaves are covered with tiny, almost un-noticeable windows, which are merely dots on the leaf surface. The leaves grow in pairs, exactly opposite each other. The new growth literally bursts up through the center of the plant. This growth also consists of two leaves, opposite each other and direct- criss-cross the old leaves. In the dryest season these plants continue to periodically put out their new growth, but then the growth draws its food and moisture from the old plant and so the old leaves gradually are absorbed and dry down until there is nothing but their dry shell left, nearly hidden under the new growth. In the wet season, these plants increase in size. In the dry season, due to some evaporation they grow SMALLER. Like those members of the family which shed their skin, these seemingly cannibalistic, self-devouring plants will very often send forth two plant-heads after they have flowered.

Since the Mimicry Plants belong to the Mesembryanthum family, they have the typical marigold-type flower. Some have but few petals and are scarcely noticeable; others have large showy blooms, often brilliant in color and sometimes larger than the plants themselves. These flowers have the appearance of being tossed carelessly down upon a rocky bed by some unseen hand—thus they are often called "Flowering Stones."

The seed pods seem quite unusual, and, in the case of *Pleiospilos,* are ornamental as well; they resemble buttons fastened on the plant. In the wild, these seed pods keep tightly closed so that the seed cannot fall when the ground is dry and the season unfavorable. When the rains come, the pods open and drop their seed. Thus Mother Nature cares for her own.

With the foregoing as a background, we begin to understand these small foreigners and we are now ready to take the proper steps in the cultivation of our guests.

POTS: Since these plants are not deep rooted, we prefer the more shallow fern-pots in which to grow them. The porous clay pots will always be best for them.

DRAINAGE: Where they are native, the soil is sandy and generally rocky—so much so

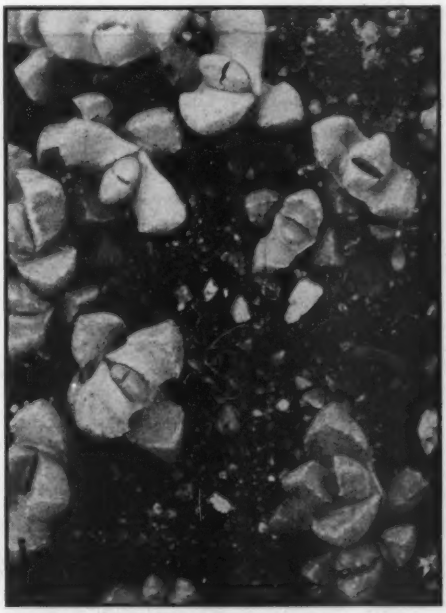

FIG. 31. *Stomatium Braunsii* L. Bol. Photo by H. Herre.

that the rains drain immediately into the parched earth and completely disappear in almost no time at all. Thus we see that drainage must be important. To provide this, we find it best to use at least an inch of shard (broken pots), gravel or charcoal in the bottom of our growing-pots.

SOIL: Since these plants actually must have some food if we expect them to grow, we use a loose, loamy soil as a base, and add to it about one third sand and a sprinkling of either lime, broken plaster, egg shells or charcoal to insure the alkalinity of the soil. With this mixture we fill our pot up to about two or two and a half inches from the top, according to the size of pot used.

TOP DRAINAGE: Whenever these plants rot, it usually starts from the base of the plant, where it touches the soil. To insure against this, and to doubly insure good drainage, we then place one or one and a half inches of fine gravel, building sand or decomposed granite on top of the soil.

WATERING: We use all of these various layers of sand and soil in a completely dry state. We plant our little Stone Faces, being careful not to bruise their roots. These plants easily stand extreme dryness. They could lay on a dry board, without soil, for several weeks. They have the ability to go dormant at will, to just go to sleep and wait for the proper time to grow. They will dry down to a smaller size. They might become wrinkled and dead looking, but when properly planted, they will immediately wake up and grow. If your plant has been slightly bruised in handling or planting, immediate watering might cause it to rot. If left dry, the plant will heal its wounds. Because of this, we find it best not to water the newly transplanted plant for from three days to a week. Too much water at any time, soon causes them to become greenish and loose their lovely colorations.

MAKING THEM COMFORTABLE: Since, in the wild, our Mimicry plants grew mostly in open ground, in full sun of the hottest sort, we now try to give them a warm place so that they may bask in the sun and feel at home. We cannot supply them with the heat or dryness of South Africa, but we give them all the sunshine we can find, and they, in turn, reward us with a flowered smile on their pretty turned-up faces, which fills our own hearts with the happiness of work well-done and the pleasure of owning and growing a few of the most unusual plants ever to be found in the whole wide world, search as we might.

FIG. 32. Six different *Lithops* grown by S. W. A. Nurseries. EDITOR'S NOTE: A limited number of Stone Faces can be purchased from the author—
See commercial listing on back cover.

SPINE CHATS

LADISLAUS CUTAK

Howard S. Reed of the University of California wrote "An Account of Sixteenth-Century Agriculture on the Mexican Plateau" in the Journal of the Washington Academy of Sciences (34:209-213, July, 1944). In this report Reed attempts to discuss cultivation and utilization of food plants mentioned in Juan Bautista Pomar's Relaciones de Tezcoco, written in 1582, and reprinted in 1941. Pomar is said to have written intelligently of the agricultural and economic systems of the people of Mexico in his day and wrote without exaggeration, untangling some of the twisted statements of other historians and adding certain details left out by others. Pomar makes frequent mention of *Opuntia tuna* which indicates that it was an important food plant then, as it is now. Practically every part of the Opuntia had some particular use. He also states that Agave was cultivated in pre-Columbian times, yielding many products of necessity and convenience. The saccharine sap was fermented to produce *pulque* or was evaported to make a syrup which was an equivalent for sugar in their dietary. The leaves were a source of fiber and of a tough paper. The people used the hot sap from Agave leaves as a vulnary, an application not mentioned by other writers on pre-Columbian botany. About this Pomar said: "One of their principal plants is a kind of maguey which they call *Coxamalometl* with which they heal all sorts of wounds. They roast the fleshy leaves in hot embers and wash the wound with the hot sap from them and allay the convulsion (spasmo) by placing the leaf on the wound. So marvelous are its effects that they make cures which the medicos regard as miraculous."

* * *

In Maryland, as well as in other South Atlantic States, *Yucca filamentosa* is often used in many ornamental plantings but its aesthetic value is often marred by a 'bug' known scientifically as *Halticotoma valida*, which causes the leaves to become unsightly due to the loss of chlorophyll and by black specks of excrement which this pest leaves behind. Elizabeth E. Haviland wrote a 10-page bulletin (Bulletin No. A37, Maryland Agricultural Experiment Station, April, 1945), recording the results of studies on the life and seasonal history of this yucca pest in which a control measure is given as regards its extermination. When the plants were sprayed with a 1% solution of DDT all the bugs were killed and the plants showed no injury from the insecticide.

* * *

During my California sojourn last year I dropped in on a fellow, by name of Lewis A. Walmsley, who operates the Soledad Gardens in Pacific Beach, a suburb of San Diego. It was rather late in the afternoon and dusk was not very far off but a chance to see his nursery was gotten before darkness fell and put an end to our tour of the premises. I now wish that Mrs. Betty Harris had taken me there earlier in the day for there was so much to see and inspect. It is true that weeds were running riot in some part of Soledad but what else could the owner do when help was not available. Mr. Walmsley faced the same problems that other nurserymen throughout the country were experiencing.

However, to get to the point of my story I'd like to mention that there are lots of nurserymen who are in the business just for the sake of making all the money they can and won't propagate any item unless it is a continuous sell-out. The colector of novelty and rare plants cannot hope to acquire additions to his collection from such sources. On the other hand there are nurserymen who love all kinds of plants and keep them from year to year even though they have never been profitable. Such a man is Mr. Walmsley. I saw more fascinating things at Soledad Gardens than at many other places. This fellow has proved that some plants that have never been considered a commercial variety will show real promise when one learns to propagate them and adapt them to a particular use.

Walmsley comes from a family that has always been interested in plant and animal life of all kinds. He tells me that their yard was full of flowers in the summer and the house full of plants in the winter, while bird houses were located all over the place. Lew's father was author of what was known as the "Walmsley Game, Bird and Fish Law" adopted by the Missouri Legislature and which has served as a pattern for most of the wildlife protective laws in the country.

Lewis Walmsley was born in Kansas City, Mo., and attended public schools in that town. As a youngster he did not have very good health, so he made the most of it to avoid school which he very much disliked. Often he tramped in the woods and fields and earned his first spending money collecting tadpoles and snails for pet shops. He collected insects and reptiles and had the yard full of boxes and tanks where these were confined. It wasn't a bit unusual for his mother to find the bathtub full of garter snakes. After quitting school Lewis worked in greenhouses, nursery and Park work and for four years served as Supervisor of Trees and Shrubs in the Park Department of Kansas City. In 1927 he started his own nursery and landscape business and two years later moved to California. In 1930 he was Superintendent of Parks and City Forester for the City of San Bernardino. Then he embarked on a matrimonial venture with Miss Faye Thomas and in 1931 the newlyweds moved to Pacific Beach where they started a Cactus nursery and have continued it ever since, except for side ventures into other lines of plants. The Walmsleys pioneered the use of cactus wood for cactus and succulent planting and also the long distance shipping of planted dish gardens and arrangements to the wholesale trade. Practically all of their sales are to florists and nurserymen in every State in the Union, Alaska, Canada and to several foreign countries. While they do not wish to develop a retail business, the Soledad Gardens are always open to plant lovers and they do make some retail sales as a matter of courtesy to visitors.

In addition to his interest in plants Lewis has always been interested in politics and national economy. For a number of years he wrote a political column for his local paper, "The North Shore Sentinel," and at present is working on a booklet dealing with taxation, currency and peace problems.

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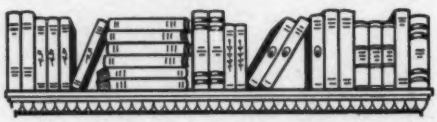

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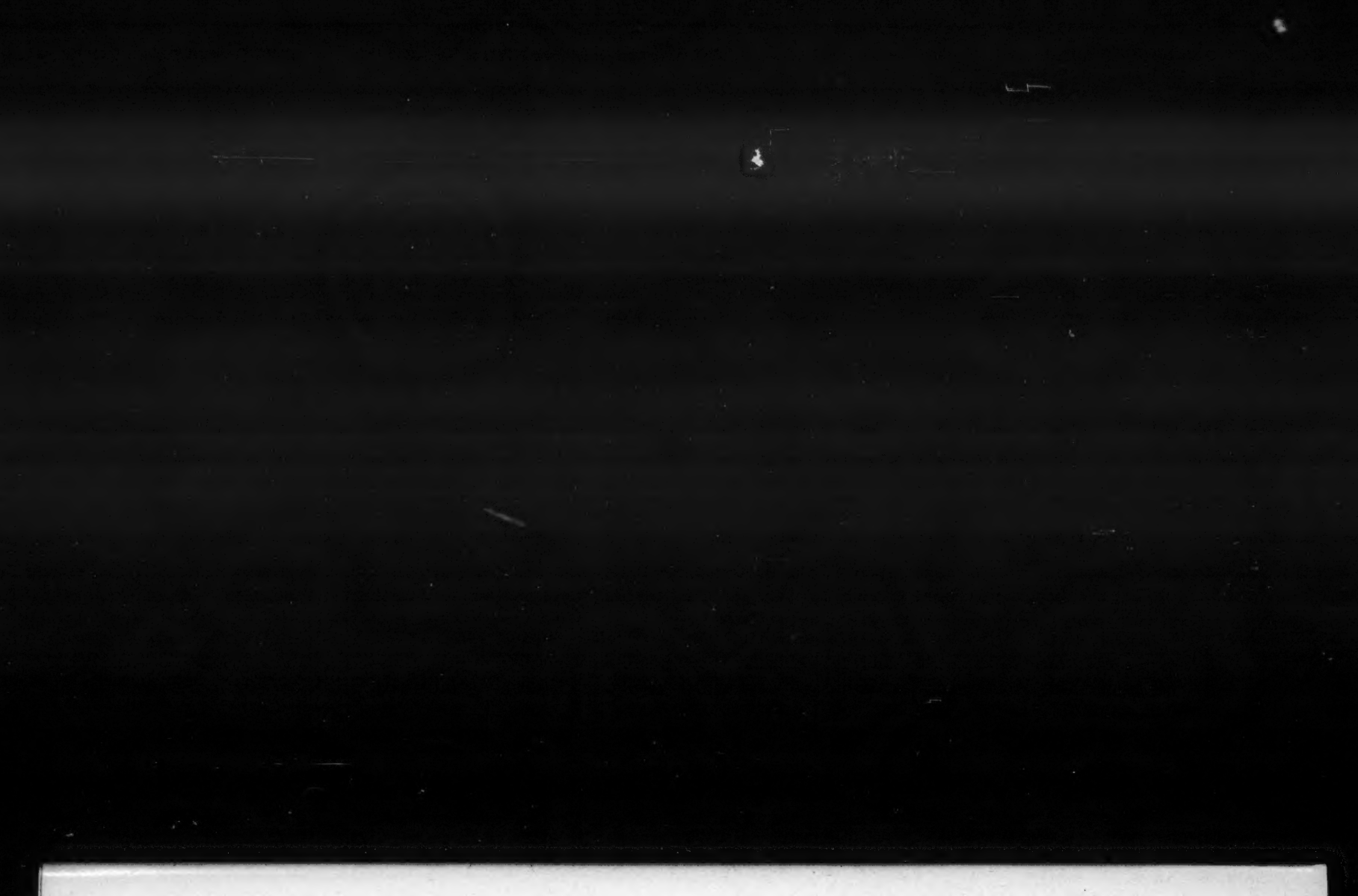
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